

REMARKS

This amendment is in response to the Official Action dated October 7, 2008. Claim 1 has been amended, claims 2-4, and 6-12 have been canceled without prejudice or disclaimer, and no claims have been added; as such, claims 1, 5, and 13-16 are now pending in this application. Claims 1 and 13 are independent claims. Reconsideration and allowance is requested in view of the claim amendments and the following remarks. In the amendment, claim 1 has been amended to incorporate the features of claim 2. No new matter has been added by this Amendment.

35 USC § 102 Rejections

Claims 13 and 14 have been rejected under 35 U.S.C. § 102(e) as being as being anticipated by Soules et al (US 6,809,477, hereinafter referred to as “Soules ‘477”). Applicant respectfully traverses this rejection.

Claim 13 recites: *[a] method for manufacturing a discharge lamp electrode, the method comprising:*

a winding step of winding a wire to form a heater, said heater having a coil portion and a first lead wire portion and a second lead wire portion that extend respectively from a rear end of the coil portion;

a connection-reinforcing-member-welding step of welding the first lead wire portion of the heater to a first connection member of a connection-reinforcing member, and of welding the second lead wire portion of the heater to a second connection member of the connection-reinforcing member, said connection-reinforcing member including the first and second connection members with them being integrated with each other by means of a coupling portion;

an application step of applying an electron emission material to the heater in a condition where the heater is held by the connection-reinforcing member;

a lead-in portion welding step of welding a first lead-in wire to the first connection member and a second lead-in wire to the second connection member; and

a cutting step of cutting off the coupling portion from the connection-reinforcing member to separate the first and second connection members from each other.

These claimed features are neither disclosed nor suggested by Soules '477. Soules '477 discloses a cathode for a low pressure mercury vapor discharge fluorescent lamp for use with an instant start circuit. Particularly, the fluorescent lamp is formed by winding an overwind wire around a first cylindrical member forming a first coiled structure, winding the first coiled structure around a second cylindrical structure forming a second coiled structure, and winding the second coiled structure around a third cylindrical structure forming a third coil structure. The fluorescent lamp of Soules '477 includes a discharge-sustaining fill sealed inside an envelope and an emitter material deposited on the coils.

Clearly, Soules '477 does not disclose or suggest *“heater having a coil portion and a first lead wire portion and a second lead wire portion that extend respectively from a rear end of the coil portion,”* let alone *“a connection-reinforcing-member-welding step of welding the first lead wire portion of the heater to a first connection member of a connection-reinforcing member, and of welding the second lead wire portion of the heater to a second connection member of the connection-reinforcing member, said connection-reinforcing member including the first and second connection members with them being integrated with each other by means of a coupling portion.”* The Office Action alleges these features can be found in Fig. 1 and the corresponding disclosure. This is wholly inaccurate.

Fig. 1 and the corresponding disclosure show a low pressure mercury vapor discharge fluorescent lamp. The lamp has a light-transmissive tube which has a circular cross section. The lamp is hermetically sealed by bases attached at the ends of the tube. Two separate electrodes are mounted on the bases. The electrodes include a coil which is coated with an emitter material. There is no mention of a heater having a first lead wire and a second lead wire.

Indeed, Soules '477 discloses the conventional configuration of a discharge fluorescent lamp. For illustration purposes only, Fig. 1 of Applicant's invention discloses a conventional discharge lamp which is similar to the fluorescent lamp of Soules '477. The discharge lamp is

equipped with electrodes at each of two opposed ends of its glass tube. The electrodes include a heater, coated with an electron emission material, having a coil portion and stretched with tension between two lead-wires inserted through an end of the glass tube and held in position thereby. The electrode and the coil portion of the heater are perpendicular to the tube axis of the glass tube. Certainly, the first lead wire portion of the heaters is not welded to a first connection member of a connection-reinforcing member and the second lead wire portion of the heater is not welded to a second connection member of the connection-reinforcing member is not disclosed or suggested by Soules '477.

As such, Soules '477 fails to teach or suggest various features of independent claim 13. Furthermore, at least for the reason disclosed above, claim 14 overcome Soules '477 because they depend on independent claim 13.

Accordingly, Applicant respectfully requests that the rejection of the claims under 35 U.S.C. § 102(e) as being anticipated over Soules '477 be withdrawn.

35 USC § 103 Rejections

Claims 1-2, 5, 15-16 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Soules '477 in view of McVey (US 4,464,603, hereinafter referred to as "McVey '603").

Applicant respectfully traverses this rejection.

Claim 1 recites: *[a] discharge lamp comprising:*

an electrode including:

a heater constituted of a coil portion and a first lead wire portion and a second lead wire portion that respectively connect the coil portion through a rear end of the coil portion, the heater having an electron emission material applied thereto; and

scattering-prevention member, which is a cylindrical sleeve whose both ends are open, for covering surrounding of the coil portion, said both open ends respectively facing the forward end and the rear end of the coil portion; and

a connection-reinforcing member that has a first connection member for connecting the first lead wire portion, and a second connection member for connecting the second lead wire portion, while the first and second connection members integrated with each other by means of a coupling portion are separated from each other by cutting the coupling portion, each of the first and second connection members being composed of L-shaped plate member,

wherein the connection-reinforcing member is supported by any one of the first and second connection members;

wherein in the electrode, the first lead wire portion is connected to a first lead-in wire and the second lead wire portion is connected to the second lead-in wire, said first and second lead-in wires being provided on two opposed ends of a glass tube in which a gas containing a light-emitting material is enclosed and to an interior of which fluorescent substance is coated;

wherein the coil portion is arranged vertically along a tube axis of the glass tube; and

wherein the coil portion is structured by a spiral wire with it being further wound spirally and without coming into contact therewith.

These claimed features are neither disclosed or suggested by Soules '477. As discussed above, Soules '477 discloses the conventional configuration of a discharge fluorescent lamp. It does not disclose *"a first lead wire portion and a second lead wire portion that respectively connect the coil portion through a rear end of the coil portion, the heater having an electron emission material applied thereto"* and *"wherein the coil portion is structured by a spiral wire with it being further wound spirally and without coming into contact therewith."*

Furthermore, McVey '603 does not remedy the deficiencies of Soules '477, as the various features recited above are also absent from McVey '603. For example, Applicant's claimed features of *"a first lead wire portion and a second lead wire portion that respectively connect the coil portion through a rear end of the coil portion, the heater having an electron emission material applied thereto,"* and *"a connection-reinforcing member that has a first connection member for connecting the first lead wire portion, and a second connection member for connecting the second*

lead wire portion, while the first and second connection members integrated with each other by means of a coupling portion are separated from each other by cutting the coupling portion, each of the first and second connection members being composed of L-shaped plate member,” are neither disclosed nor suggested by McVey ‘603.

McVey ‘603 discloses an end closure for a tubular light-transmitting ceramic envelope used in sodium vapor lamps. More particularly, the end closure comprises a ceramic disc fitted into one end of a metal sleeve having a different diameter opening at its opposite end as well as an arc tube inserted therein and hermetically sealed by a ceramic sealing frit. The ceramic disk includes a central opening for passage of a thermionic electrode which is also hermetically sealed with a ceramic sealing frit. The end closure can only be used for the conventional fluorescent lamp configuration as disclosed in paragraph 4, lines 21-27 of McVey ‘603. Clearly, McVey ‘603 does not disclose or even suggest a scattering prevention member for covering surrounding of the coil portion wherein the coil has a first lead wire portion and a second lead wire portion that respectively connects the coil portion through the rear end of the coil portion.

Since even a combination of the relied upon references would still fail to yield the claimed invention, Applicant submits that a prima facie case of obviousness for claim 1 has not been presented. Applicant also notes that the offered combination appears to be a failed attempt to reconstruct the claimed invention in hindsight, as there is no basis to combine the fluorescent lamp electrode of Soules ‘477 with the end closure of McVey ‘603.

For the reasons stated above, claims 5 and 15-16 overcome the combination of Soules ‘477 and McVey ‘603 because they depend on independent claims 1 and 13.

Accordingly, Applicant respectfully requests that the rejection of claims 1, 2, 5, 15-16 under 35 U.S.C. § 103(a) as being unpatentable over Soules ‘477 in view of McVey ‘603 be withdrawn.

In view of the above amendment, applicant believes the pending application is in condition for allowance.

Application No. 10/586,449
Amendment dated December 18, 2008
Reply to Office Action of October 7, 2008

Docket No.: SON-3175

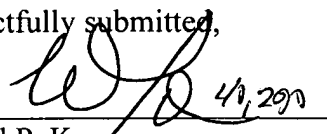
In view of the foregoing arguments, all claims are believed to be in condition for allowance. If any further issues remain, the Examiner is invited to telephone the undersigned to resolve them.

Applicant believes no fee is due with this response. However, if a fee is due, please charge our Deposit Account No. 18-0013, under Order No. SON-3175 from which the undersigned is authorized to draw.

Dated: December 18, 2008

Respectfully submitted,

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